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PLANT IMMIGRANTS

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Descriptive notes furnished mainly by Agricultural Explorers and Foreign Correspondents relative to such newly introduced plants as have arrived during the month at the Office of Foreign Seed and Plant Introduction of the Bureau of Plant Industry of the Department of Agriculture. These descriptions are revised and published later in the Inventory of Plants Imported.

No. 98.

June 1914.

Genera Represented in This Number.

Acacia	38524	Mangifera	38379-382
Achradelpha	38478		38387
Amygdalus	38469-470		38390-391
Belou	38389	Nunnezharia	38403-404
Bombycodendron	38486		38582
Canarium	38372	Passiflora	38373
Cocops	38588	Persea	38400-402
Cocos	38428-434		38477
Coix	38473-476		38549-564
Dillenia	38383-384		38578, 38581
Dimocarpus	38374		38583, 38587
Diospyros	38482		38638-640
Eriobotrya	38496-497	Reinhardtia	38538-540
	38568	Rhododendron	38413
Ferula	38633	Soja	38450-462
Lactuca	38657	Zea	38544

PLATES: Macauba palms. Minas Geraes, Brazil.

The abiu, a Brazilian sapotaceous fruit.

Bamboo windbreak at Lavras, Brazil.

(NOTE: Applications for material listed in these multigraphed sheets may be made at any time to this Office. As they are received they are filed, and when the material is ready for the use of experimenters it is sent to those on the list of applicants who can show that they are prepared to care for it, as well as to others selected because of their special fitness to experiment with the particular plants imported.)

One of the main objects of the Office of Foreign Seed and Plant Introduction is to secure material for plant experimenters, and it will undertake as far as possible to fill any specific requests for foreign seeds or plants from plant breeders or others interested.)

Matter in these multigraphed sheets must not be published without special permission.

Acacia verek. (Mimosaceae.) 38524. Seed of the gum arabic acacia from Khartoum, Sudan. Presented by Mr. S. A. Wood, Assistant Director of Forests, Department of Agriculture and Forests. "This tree produces the true gum arabic of commerce. It thrives best in a dry climate with a maximum rainfall of 21 inches and a dry period of no rain for several months. Any soil will suit it. The tree as it grows out here is fit for tapping in the fifth year after sowing." (Wood.)

Acradelpha sp. (Sapotaceae.) 38478-481, 38566. Seeds of the injerto from Coban and Guatemala City, Guatemala. Collected by Mr. O. F. Cook, of this Bureau. "Another 'find' not properly appreciated before is the green sapote, injerto or raxtul as the Indians call it. This was described recently by Pittier as *Calocarpum viride* but the generic name is a homonym and I have proposed *Achradelpha* to replace it. This new species is a much finer tree than the true sapote and apparently much better adapted to a cool climate. The foliage is much heavier than that of the sapote and of a deeper green color, in form and general appearance not very unlike that of the loquat, but the trees grow to a large size and are very handsome. They take the place of the sapote altogether at the higher altitudes around Coban, although both trees are found in the Senshu and Cajabon districts. The failure of the sapote to thrive in Florida need not exclude the green sapote, and a trial planting will be in order. The seeds are like those of the true sapote, but smaller and in some varieties much shorter. The fruits of this green sapote run through the same series of varietal forms as those of the sapodilla. The quality of the flesh is distinctly superior to that of the true sapote, and much more likely to please the American palate. Anybody who likes papaya or Japanese persimmons might be expected to think favorably of the green sapote, for it comes distinctly into the same class of sweetish, smooth, tender, pulpy fruits. There is no astringency or unpleasant aftertaste whatever, so that none of the curing difficulties of the persimmons would be encountered. On the outside the fruits are a pleasing yellowish-green color. more or less russeted at either end. The flesh inside is yellow, but with a reddish or brownish tinge, not as yellow as some of the Japanese persimmons, nor as dark as others." (Cook.)

Amygdalus persica. (Amygdalaceae.) 38469-470. Seeds of peaches from Feitcheng, Shantung, China. The famous Fei peach and a large variety of flat peach said to be of light-red color, and very juicy and sweet. Chinese name 'Ta hong pien tao,' meaning 'large red flat peach.' (Meyer's introduction.)

Belou marmelos. (Rutaceae.) 38389. Plants of the bael fruit from Manila. Presented by Mr. H. T. Edwards, Director of Agriculture, through Mr. Harry H. Boyle, Assistant Horticulturist. "Seedlings of a fruit obtained from a tree grown on the plaza of the largest pagoda in Siam which is situated in the town of Propatone. As this fruit was of a different type from the ordinary bael fruit it is thought that it might be of some value. The fruit is fully five inches in length and two and a half inches in width, more melon shape than pyriform." (Boyle.)

Bombycodendron vidalianum. (Malvaceae.) 38486. Seeds of the lanutan from Lamac, Bataan, Philippine Islands. Presented by Mr. P. J. Wester, Horticulturist in charge, Lamac Experiment Station. "Seeds of the lanutan, a tree valuable for its wood, and also quite ornamental with large white flowers with a red center, shaped like those of the tropical *Hibiscus rosa-sinensis*, and about 7 inches in diameter. It is probably too tender for Florida." (Wester.)

Canarium sp. (Burseraceae.) 38372. Plants of the pill nut from Manila. Presented by Mr. H. T. Edwards, Director of Agriculture, through Mr. Harry H. Boyle, Assistant Horticulturist. "Trees of this nut are found growing in the various islands of southern Luzon, in the province of Albay. The leaves are compound, and the fruit is a triangular drupe containing one seed. The nuts are eaten quite extensively in the islands and throughout the Far East. From them an oil is extracted which is used for the table and also for burning in lamps. This nut, to my notion, is the best I have ever eaten. During the past two years quite a number of shipments of this nut have been made to San Francisco and they find a ready market. A gum, that resembles in properties the copaiba balsam, is extracted from the bark." (Boyle.)

Cocos rivalis. (Phoenicaceae.) 38588. Plants of a palm from Mayaguez, Porto Rico. Presented by Mr. W. E. Hess, Agricultural Experiment Station. "The rarest and prettiest of Porto Rico palms. This species greatly resembles in habit and appearance *Geonoma gracilis* but has more leaflets. At its type location it is growing on the bank of a stream with its roots in the water and in another location some 8 miles distant in an apparently dry limestone ravine. There are probably not more than a couple of dozen specimens left and among these less than half a dozen fruiting trees; being of little value to the natives, when large enough they are cut down for fence posts." (Hess.)

Cocos nucifera. (Pheonicaceae.) 38428-434. Seeds of seven varieties of coconuts from Pago Pago, American Samoa. Presented by Commander C. D. Stearns, Governor. Among

these varieties are some especially good for copra, others suitable for confectionery, and another usually picked green as the husk is considered of more value for manufacturing twine than is the fruit for copra making.

Coix lacryma-jobi. (Poaceae.) 38473-476. Seed of four varieties of Job's-tears from the Northern Shan States, Burma. Presented by Mr. H. G. Carter, Economic Botanist to the Botanical Survey of India, Indian Museum, Calcutta. This species is extensively cultivated by the native tribes of eastern India, Burma, Assam, southern China, and Malaya, and supplies a food product much appreciated especially in famine years, being parched, boiled or ground into flour. The seeds are used as beads in the industries of the natives but the hardness and high polish of shell are lost in cultivation so that only wild forms may be used.

Dillenia spp. (Dilleniaceae.) 38383-384. Plants from Manila. Presented by Mr. H. T. Edwards, Director of Agriculture, through Mr. Harry H. Boyle, Assistant Horticulturist. Two species of ornamental shade trees, the fruits of which are eaten with fish by the natives.

Dimocarpus sp. (Sapindaceae.) 38374. Plants from Manila. Presented by Mr. H. T. Edwards, Director of Agriculture, through Mr. Harry H. Boyle, Assistant Horticulturist. "Undoubtedly a new species, closely allied to the longan, found in the mountains of Cavite province near the town of Silang, P. I. The trees are one and one-half feet in diameter, and from 50 to 60 feet in height. The fruit has a remarkably sweet flavor, and the pulp is semi-transparent. It is greatly prized by all who eat it." (Boyle.)

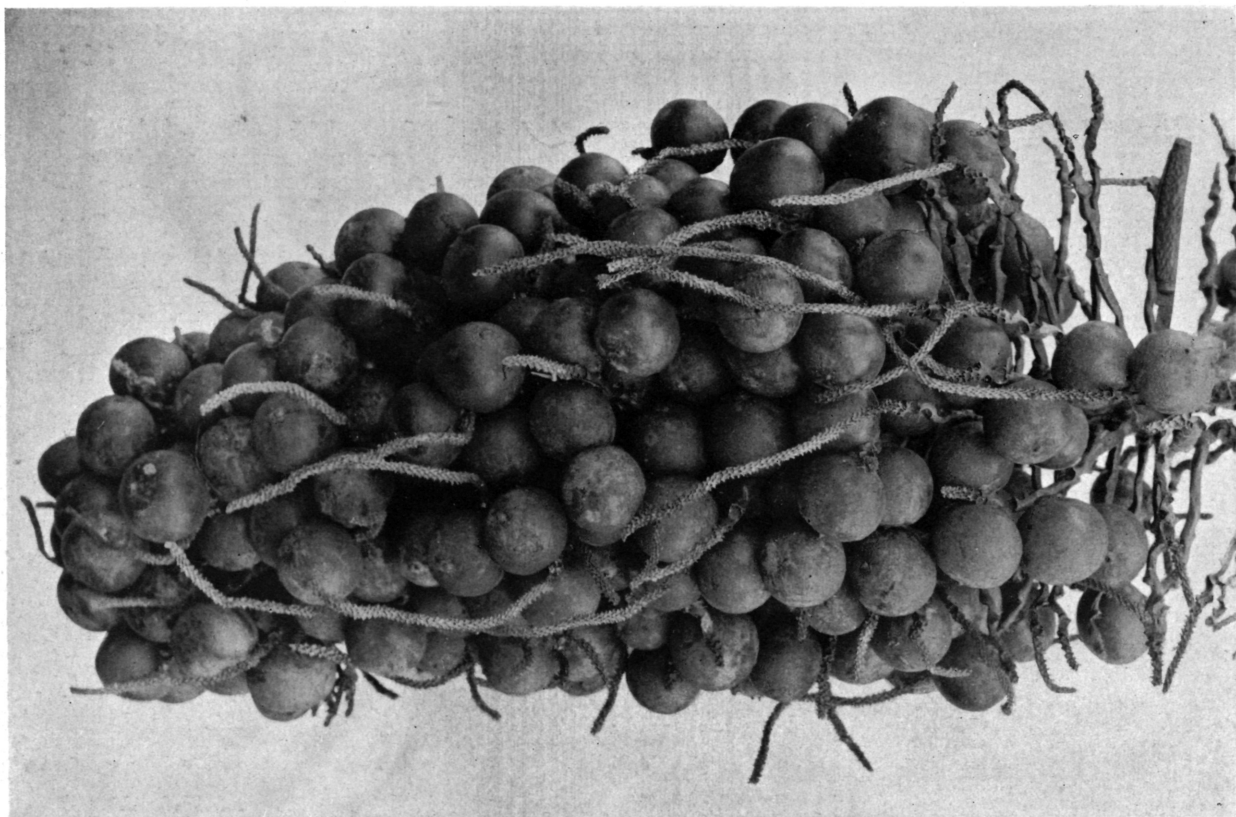
Diospyros kaki. (Ebenaceae.) 38482. Cuttings of a persimmon from Sunnylands, Bermuda. Presented by Mr. Theodore Outerbridge, through Mr. Peter Bisset of this Office. "A variety bearing annually about 50 staminate flowers to one pistillate. It should therefore prove a valuable pollinator for planting in orchards of kaki persimmons, if the plants maintain this feature, as up to the present a great loss of fruit is sustained yearly in these orchards from lack of pollination. The fruit borne by the parent tree is said to be of good size and quality." (Bisset.)

Eriobotrya japonica. (Malaceae.) 38496-497. Seeds of loquats from Naples and Boscotrecase, Italy, and from Algiers, Algeria. Presented by Dr. Gustav Eisen, and Dr. L. Trabut, respectively. The three varieties are described: "38496. Seeds of a large plum-shaped loquat from Naples. Very early, ripe April 1. Extraordinarily sweet;



A GROUP OF MACAUBA PALMS NEAR SAO JOAO D'EL REY.
(*Acrocomia intumescens?*)

This beautiful palm is one of the features of the landscape in the interior of Minas Geraes. Its trunk is armed with long black spines. The leaves are of a glaucous green color, graceful and attractive in appearance, and seem to resist a great deal of thrashing about by the wind. In this photograph a small group is seen growing on a hillside overlooking the city of Sao Joao d'El Rey, at an altitude of more than 800 meters. The species is found at considerably greater altitudes than this, which leads to the belief that it may be hardy enough to succeed in California and Florida. Photo No. 1538 by Brazilian Expedition, taken at Sao Joao d'El Rey, Minas Geraes, Brazil, Jan. 27, 1914.



FRUITS OF THE MACAUBA PALM.

In the vicinity of towns many of the palms are cut to obtain the tender, white terminal bud, which is boiled and eaten as a vegetable. The fruit clusters are very large, sometimes weighing 60 or 70 pounds. Surrounding the hard seed in the center of each fruit is a thick layer of white, woody flesh which is very nutritious. Because of its insipid flavor it is not commonly eaten by the natives, but is used to fatten hogs with, for which purpose it is considered excellent. It also contains an oil, which is sometimes expressed in small quantities and used for lubricating. Photo No. 1294, by Brazilian Expedition, taken at Lavras, Minas Geraes, Jan. 22, 1914.

seeds variable and not in conformity with the fruit. This is the earliest in the market and quite remarkable as to size and quality." (Eisen.) "38497. Giant loquat. Very finest quality and largest size. Of bright deep orange color, seeds round. The tree is said to be an enormous bearer and of the very best quality. Ripe from May 1 to 24." (Eisen.) "38568. Tanaka loquat. An excellent variety with very firm flesh of a yellow color. Stands transportation for a period of one week. In Algeria the seeds give varieties superior to the original type, furnishing interesting varieties for the market." (Trabut.)

Ferula sp. (Apiaceae.) 38633. Roots of asafoetida from Meshed, Persia. Presented by Mr. Craig W. Wadsworth, American Consul-General, Teheran, Persia. "Ferula, which produces the asafoetida of commerce, grows in the vicinity of Meshed and Kerman. I was unable to obtain seed from the former place, but one of the missionaries at Meshed, with the assistance of the British Consul, succeeded in obtaining these roots." (Wadsworth.)

Lactuca sativa. (Cichoriaceae.) 38657. Lettuce seeds from Manila. Presented by Mr. O. W. Barrett, Chief, Division of Horticulture, through Mr. Harry H. Boyle, Assistant Horticulturist. "I have grown many varieties of lettuce and worked with a number of hybrids produced in the Department. If my memory serves me well there is not one variety or one hybrid which will equal this lettuce when grown properly. It strongly resembles a cross between Grand Rapids and Golden Queen, a semi-open and semi-heading variety. During its young stages of growth it has the brightest golden color of any lettuce I know of. This character alone would make it especially valuable for garnishing dishes. Aside from this it is a very good table lettuce. This was obtained from Macao, a Portuguese possession on the coast of China, sent to the Manila Bureau of Agriculture by Mr. Soares, Hongkong, China." (Boyle.)

Mangifera spp. (Anacardiaceae.) 38379-382, 38387, 38390-391. Mango plants from Manila. Presented by Mr. H. T. Edwards, Director of Agriculture, through Mr. Harry H. Boyle, Assistant Horticulturist. Seven varieties of mangos, including several unidentified varieties of good fruiting quality from the Buitenzorg Gardens, Cochin China, which is one of the best varieties of that country, and the carabao and pico, the best and second best Philippine varieties.

Nunnezharia pacaya. (Pheonicaceae.) 38403-404, 38582. Seeds and lants of the salad palm from Coban, and San Antonio, Guatemala. Collected by Mr. O. F. Cook of this

Bureau. "Pacaya palms are grown here in great abundance so that any amount of seed could be obtained. Some of the palms have four five or even six pacayas, as the edible male inflorescences are called. I feel confident that the palms would grow very well under slat house conditions, and would suggest that a planting be made on that basis at Miami, with the idea of leaving some of the palms to grow to maturity. They attain a height of 12 to 15 feet, but fruit much younger, possibly in the third or fourth year." (Cook.)

Passiflora laurifolia. (Passifloraceae.) 38373. Plants of passion fruit from Manila. Presented by Mr. H. T. Edwards, Director of Agriculture, through Mr. Harry H. Boyle, Assistant Horticulturist. "An edible variety obtained from Mr. P. Morange, Director, Saigon Botanic Gardens, Cochin China. The fruit is a bright yellow color, pear-shaped, about the size of the ordinary pear tomato, and very similar to it in appearance. There is extracted from the leaves a bitter substance which is employed to counteract intermittent fever." (Boyle.)

Persea americana. (Lauraceae.) 38400-402, 38477, 38549-564, 38578, 38581, 38583, 38587, 38638-640. Scions and seeds of avocados from Coban, Antigua, and Guatemala City, Guatemala. Collected by Mr. O. F. Cook, of this Bureau. "The avocado season is much too far along now (in May and June) to do satisfactory work. In most places the season is completely over but at the higher altitudes a few fruits are still in the market, as yet none of a quality to particularly recommend them. It is the late varieties of these countries that we want. The early varieties ripen in August and September, the others in December, etc., and as the colder places are reached the crop goes around into the spring months." (Cook.) Twenty-seven varieties of hard-shelled avocados.

Reinhardtia spp. (Phoenicaceae.) 38538-540. Seeds of a palm from Livingston, Guatemala. Collected by Mr. O. F. Cook. "A small palm 10-15 feet high; trunk 4 inches thick, bearing large clusters of coral red fruits about the size of thorn apples (*Crataegus*) and having exactly the same taste." (Cook.)

Rhododendron dauricum. (Ericaceae.) 38413. Seeds of a rhododendron from Novospasskoe, Russia. Presented by Mr. A. Woeikoff, Director, Bureau of Acclimatization. "This purple-flowered *Rhododendron* is a native of Dahuria, Manchuria, and Sachalin, and coming from a cold region, a spell of mild weather in midwinter causes it to begin to open its flowers very early in this country (England);



THE ABIU, A POPULAR BRAZILIAN FRUIT.

This valuable fruit is produced by the abieiro, or abiu-tree (pronounced ah-bee-u), botanically *Pouteria caimito* (R. & P.) Radlk., commonly cultivated in gardens about Rio de Janeiro and to a less extent at Bahia. The tree is upright, pyramidal in form, of small size and handsome appearance. The fruit ripens in February and March; externally it is deep yellow in color, occasionally overspread with green around the base. The flesh is white, translucent, melting in texture and of a sweet, bland flavor strongly resembling that of the sapodilla. The abiu is eaten while fresh, without cooking or preparation in any way. It is highly esteemed by all classes of Brazilians, and specimens such as the ones shown above sell in the markets of Bahia for the equivalent of three cents each. It should be given a trial in southern California and Florida. Photo No. 2105, by Brazilian Expedition, taken at Bahia, Brazil, March 3, 1914.



A BAMBOO WINDBREAK AT LAVRAS, BRAZIL.

This magnificent planting of bamboo surrounds the experimental farm of the Instituto Evangelico at Lavras, in the state of Minas Geraes. The species is believed to be an introduced one, as are several other bamboos which are widely grown and utilized in Brazil. As well as protecting the enclosed plantation from the wind, it serves as a source of material for the manufacture of baskets, chicken coops, fences, and particularly cheese crates, of which quantities are used in the dairying regions of Minas Geraes. Photo No. 1493, by Brazilian Expedition, taken at Lavras, Minas Geraes, Brazil, Jan. 22, 1914.

therefore they often fall a prey to frost before they can expand. Nevertheless it is a good kind of plant, for in those seasons when it does escape injury it adds a brilliant touch of color to the garden at a very dull season. There are several forms of the plant, some having deciduous leaves, and in other cases the leaves are evergreen or sub-evergreen." (The Garden, Jan. 11, 1913.)

Soja max. (Fabaceae.) 38450-462. Seeds of the soybean from Sianfu, Shensi, China. Thirteen varieties of this important Chinese crop plant, hitherto called *Glycine hispida* in the Office publications. Mr. C. V. Piper has recently shown that the name should be *Soja max* and we have listed the introductions here to direct attention to the change. (Meyer's introductions.)

Zea mays. (Poaceae.) 38544. Ears of corn from the Upper Gy Parana River, Brazil. Collected by Mr. Leo E. Miller, of New York, collector for the Roosevelt Brazilian Expedition. "Corn received from the 'Pauetes' or 'Powetes' Indians on the Upper Gy Parana (Machabo) River, Brazil. This tribe of Indians was absolutely unknown. I was the first person to come into contact with them. The Gy Parana flows into the Madeira." (Miller.)

NOTES FROM CORRESPONDENTS ABROAD.

Rev. W. M. Hayes writes from Tsingchowfu, Shantung, China, May 25, 1914. "I do not know whether Mr. Meyer, when through this section, secured specimens of the Chinese winter pear or not. We are eating them on the table every day now, and they will last some time yet. This variety is really not ripe until the next spring after it is picked, and while not as luscious as a good apple, yet it fills a vacancy in April and May very acceptably. As you know that is a season when the housewives find it difficult to provide for the table.

"Thanks for what you say about peach grafting: the Chinese bud too, but they find grafting more satisfactory because it gives quicker results. They do not use grafting wax, but use a heavy ball of clay, as much as they can make adhere to the limb, and tie it on with a species of tough pliant leaves. I find that oiled paper though will do equally well. The point in wrapping the clay with the leaves is to keep it from being washed away in the rains. If the season should be a prolonged dry one, which we are very liable to have here in the spring, then they tear off the top of the wrapping and pour in water enough to moisten the clay again."

Mr. Frank N. Meyer writes from Peking, China, June 4, 1914, suggesting the following tentative itinerary for the coming year. Certain changes in it will no doubt be nec-

essary but in the main he will, it is hoped, be able to carry out this plan. "My plans for leaving for western China are assuming the following shape: from Peking to Chang tō fu, in Northern Honan, by train. Then by carts to Lin hsien; here in the neighboring mountains many rare trees are said to abound, like *Pinus bungeana*, various conifers and others.

"From Lin hsien by pack animals through the wild mountains, to Pai hsiang chen (Shansi) where these large jujubes are cultivated. Here I will try to get photos of green fruits and the orchards in leaf, though it may be too early yet.

"From Pai hsiang chen, we will move on to Sianfu, Shensi. Then probably by the southern route over Fōng siang fu to Chow tien (N. Szechuan). Then along the Hei shin ho (black water stream) to Kiai, trying to collect wild peaches (*A. persica* var. *potanini*) and almonds which occur there.

"From Kiai we may go over Siho and Titao to Lanchowfu, Kansu.

"From Lanchowfu I may go to Sining and return by way of Chobsen and Chetertou to Lanchowfu again, passing through regions rich in forests and where Przewalski collected many novelties.

"In late winter (1914) or early spring, 1915, I may leave Lanchowfu, and go by way of Titao, Minchow, Siku, Kungala pass (19000 ft. alt.) to Sungpan (Szechuan). From there to Chengtu and Chungking. Then along the Yang tse Kiang over Wan hsien and Tchang to Hankow. In Szechuan and Hupeh I will make special enquiries regarding woodnut-oil problems and bamboo-manufacture. In May 1915 I may again be in Peking and then leave for America, arriving in Washington possibly before the fiscal year has expired.

"The problems to which special attention will be paid on this coming journey are those connected with jujubes, persimmons, wild peaches, and other wild fruits, bamboos and wood-oil trees. Of course, as usual, I will stumble across lots of things too interesting not to bag them also.

"There are several dark clouds hanging over these proposed journeys. The worst is the brigandage out in N. W. China. Powerful bands of these rascals are still operating in Kansu especially, and at times I am considerably worried by the accounts one finds in the papers. I would hate to lose my whole outfit in an encounter with these scoundrels.

"Another problem is the money question. Will I be able to finance the thing properly? We will try and see and when I do not get robbed, I think we will be able to manage it alright.

"The third difficulty is the one that is always with one, viz., will my new interpreter prove to be up to our desires? All we can do is to hope for the best."

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